Chapter-06

STUDY OF CROHN'S DISEASE IN THE COMPARISON OF ULCERATIVE COLITIS WITH TRADITIONAL MANAGEMENTS

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ABSTRACT

The ulcerative colitis as well as crohn's disease is commonly referred to as chronic inflammatory bowel disease. The crohn's disease affects the terminal ileum or anal canal that is known as ***terminal ileitis*** *whenever, it involves a part of intestine then, it is* ***called regional ileitis.*** *It involves mostly colon, but may affect whole digestive tract from mouth to anus, if long lasting inflammation and ulcer in digestive tract which affect inner most lining of large intestine (colon) and rectum, While the ulcerative colitis is an inflammatory bowel disease, caused by chronic inflammation and ulcers (sores) in digestive tract and it affects the innermost lining of large intestine such as colon, and rectum. Usually, Infection, Nutritional (food containing sulfur or sulfate), Psychosomatic (depression) and immunological causes help in the development of ulcerative colitis. While conventional treatments can be effective in maintaining remission and decreasing the length of active disease periods. This review article refer to management of UC in the form of dietary changes, appropriate alternative treatment and reduce the extra-intestinal complication.*

Keyword: *Pathological changes, clinical diagnosis, extra intestinal manifestation.*

1. INTRODUCTION

In crohn's disease all layer of intestinal wall involved, which are dull, purple-red colour, two or three time more thickened and covered with thick grayish white exudates. The involve segment are often adherent to adjacent loops or other viscera due to intense serosal reaction the affected loop adhere to adjacent structure. The affected bowel is separated apparently from normal bowel loop that known as skip lesion. The mucosal surface is varied from normal to slight oedema and hyperemia so, the ***Serpigenous ulcer and long snail tract ulcers*** are develop from coalescence of previous ulcer. The transverse ulcer ***'cobblestone's appearance*** also intervenes in elevated mucosa. These are caused sub mucosal thickening and penetrate deep into muscular layer. The infection gains to the muscular layer so, the Trans mural inflammatory process start in all layers. So, the lumen becomes narrow and bowel wall thickened by fibrosis, oedema and cellular infiltration. The ulcer ***penetrates*** to muscular layer to serosal layer which responsible to perforation, abscess and fistula. The fissures may also develop from mucosal ulcer and extend into bowel wall. The abscess and fistula are developed between loops. The fistula penetrates into any organ with in abdominal cavity which form intestinal fistula. It connects with Pelvicolon that is known as Entrocolic fistula, whenever, it connects with urinary bladder known as Entero vesical. The external fistula develops in right iliac fossa which opens outside of abdomen (Lightner et al., 2019)

Crohn disease can affect any part of the GIT system, about one-third in small intestine especially in the terminal ileum, about 20% in colon and about 50% in both the large and small intestine. This patient life quality is very poor in this disease. (Ranasinghe et al., 2017)

2. PATHOLOGICAL CHANGES

In ulcerative colitis, both colon and rectum are affected, typically involves only the innermost layer of mucosa. The manifestation of UC is continuously inflammated and form ulcer in the localized area**.** (Kathleen Head et al., 2004). In the crohn's disease mostly involve both colon and terminal ileum in 55% of patients. The disease was confined to the terminal ileum, other areas of the small intestine, or colon-only in 14%, 3%, and 15% of patients, respectively. ***(Mekhjian et al., 1979).*** **In early phase,** the entire bowel wall is oedematous specially sub mucosa while mucosa is essentially normal. The fibrino purulent exudates are present on the serosal surface and granulomas are not found in early phase. **In intermediate phase,** the bowel thickening is produced fibrosis of mucosa and sub mucosa. The mucosal ulcer involves deeper to muscle coat. The lamina propria is infiltrated in lymphocytes, plasma cells and a number of eosinophils. **In the later stage,** in sub mucosa, there are extensive fibrosis take place with diffuse infiltration of mononuclear cells, hypertrophy and hyperplasia of lymphoid follicles. The granulomas are present in sub mucosa, serosa and regional lymph nodes. It resembles to epitheloid giant cell granulomas of tuberculosis but there are no tubercle bacilli so, it is called **Sarcoid like granulomas**. **In ulcerative colitis** mucosal and sub mucosal layer of colonic wall, especially in rectum about 90-95% and in terminal ileum about 10% in all cases. (Greuter et al., 2018)

3. ETIOLOGICAL AND CAUSATIVE FACTORS

The etiology of Crohn's disease has three important theories. (1). The autoimmune theory, (2). The immune deficiency theory (3). The mycobacterial theory. At present, most published papers refer to autoimmune mechanisms as the most likely cause. Crohn's disease is a syndrome defined by clinical, endoscopic, radiologic and histologic criteria. (Chamberlin, W. M., & Naser, S. A., **2006)**. The exact causes of inflammation is unknown, some factors may involve such as drugs, toxins, intestinal infections or microbes, Wrong eating habit, malnutrion and sedentary life style, weak immune, anxiety, stress help in the development of crohn's disease. In Crohn disease, genetic involvement with phenotypes may be found such as NOD2 / CARD15 mutations in young group of age, (Zaidi, D., & Wine, E., 2018) ***Extra intestinal manifestation: (Ephgrave, K., 2007).***

4. CLINICAL FINDING AND HISTORY EVALUATION

Table-1: Common Symptoms of Crohn's Disease and Ulcerative Colitis

	Crohn's disease	**Ulcerative colitis**
1	Diarrhoea with blood or mucus mixed.	Watery diarrhoea with mucus mixed or blood.
2	Feeling of urgent bowel movement.	Feeling of urgent bowel movement.
3	Loss of weight, lack of appetite due to poor digestion and intestinal absorption.	Appetite decreases during exacerbation disease and Loss of weight in severe cases.
4	Abdominal pain in right iliac fossa.	Lower abdominal pain and cramping.
5	In severe illness, low grade fever and fatigue	Low grade fever in severe illness and fatigue
6	Risk of colon cancer present.	Risk of colon cancer present.
General symptoms of crohn's disease and ulcerative colitis:		
1	Common in lower ileum but can anywhere in the GIT system and skip-lesions with intervening normal mucosa	Inflammation extending continuously to proximal part from rectum in mucosa or sub mucosa only.
2	Bleeding (uncommon)	Bleeding common and anaemia
	Painful sore near anus and mouth sore	Transmural inflammation.
3	Moderate to severe tenderness	Mild tenderness
	Weak autoimmune may be responsible.	Yersinia species and ***E. coli,*** particularly found in UC.

- **Skin –** In this field, many skin diseases are reported such as erythma nodusum and pyoderma gangrenosum, the lesions commonly found near the tibia on the lower extremities, both erythma nodusum and pyoderma gangrenosum are found up to 20% of case.
- **Joints –**As a complication of CD and UC many joints are inflamed such as peripheral joint inflammation, axial arthritis, osteoporosis and Ankylosing spondylitis.
- **Eye –** The manifestations of eyes are iritis / uveitis, blurred vision, photophobia,

burning and itching, tearing, hyperemia, pain, and it occur in 10% of cases or fewer. The recent recommendation in the ophthalmological examinations should be done for all inflammatory bowel disease. It may give result be as severe as blindness or corneal perforation.

- **Mouth –** The aphthous ulcerations of mucous membranes. Apthous stomatis.
- **Hepato biliary –** Cholelithasis, sclerosing cholangitis and Fatty liver.
- **Psychological symptoms-** The anxiety and depression are reported in chronic IBD.
- **Respiratory symptoms-** In CD and UC cases, the asthma is most commonly reported. (Mendoza et al., 2005)
- **Complication-** The CD is a systemic disease which involves deferent site of intestine and may involve the extra-intestinal organ and produce complications.

Table-2: Crohn's Disease Vs Ulcerative Colitis

Crohn's Disease	**Ulcerative Colitis**
Stricture formation	**Local Complication:**
Small intestine bacterial growth (SIBG)	Haemorrhage
abscesses and fistulae are common.	Perianal, peri rectal abscess, fistula rare.
Colorectal carcinoma	Carcinoma of colon
Ankylosing spondylitis	Toxic mega colon
Episcleritis, iritis	Perforation and Stricture
Renal calculi	**Systemic complication:**
Inflammation of eye, Joint or Liver	Avitaminosis and Hypoprotenaemia
Erythema nodusum, pyoderma gangrenosum	Macrocytic anaemia and Amenorrhoea
Osteoporosis	Osteoprosis and Amyloidosis

5. DEFERENTIAL DIAGNOSIS *(Basson, M., 2015)*

Table-3: Deferential Diagnosis

Crohn's disease	**Ulcerative colitis**
Amoebiasis	Dysentery.
Intestinal tuberculosis	Bacterial Gastroenteritis

Intestinal carcinoid	Ischemic colitis.
Ulcerative colitis	Crohn's disease
Pan intestinal	Rectal Cancer
Mesenteric ischemia	Colon Polyp
Behcet disease	Diverticulitis of the Colon

6. INVESTIGATIONAL EVALUATION

i. Stool analysis: It includes – (Gong et al., 2019)

- Ovum, cyst- To identify the deferent type of manifestation of parasites.
- Culture and sensitivities- To find out the specific microbe such as Clostridium difficile, Escherichia coli, Salmonella, Shigella and its sensitivity drugs.
- Clostridium toxins are playing a role for exacerbation of the inflammatory process up to 5% with ulcerative colitis or Crohn's disease. It may present toxic colitis and toxic mega colon in severe illness. (Freeman H.J.,2002)
- RBC and Leukocyte count.
- The active Crohn's disease can be detected by faecal calprotectin for diagnosis.
- The barium enema radiology, Endoscopy and Biopsy is also helpful for diagnosis in ulcerative colitis.

ii. Management of Crohn's Disease: (Lichtenstein et al., 2018)

In 2018, the American College of gastroenterology is published a guideline for the management of Crohn's disease, *to treat acute disease then to maintain remission.*

- Avoid NSAIDs and smoking.
- Get mental health rehabilitation to reduce depression.
- Tb. Azulfidine (Sulfasalazine) is used in mild illness.
- Tb. Metronidazole is ineffective in Crohn disease.
- Anti diarrheal drugs can be used in mild case of diarrhea.
- In steroids resistant patients, the anti TNFs (tumour necrosis factor) can be used in CD.
- The abscess is drained under the radiological imagining, if possible.

- *The surgical procedure is applying* for complications *in obstructing stenosis,* abscess, and perforated bowel, *suppurative conditions or in fistula.*
- Laooqe khashkhash 10gm in morning and evening should be given.
- Qurs e Zahir 2tb in morning and evening.

7. ULCERATIVE COLITIS

i. Types:

a) Chronic and continuous ulcerative colitis: The onset is usually gradual. diarrhoea. gradually weight loss and anaemia. Lower abdominal pain, cramps in early phase. tenusmus, urgency and blood, mucus and pus mixed watery stool.

b) Chronic relapsing and remitting: It is commonest form of ulcerative colitis. The recurrences are associated with emotional stress in acute illness, during menstruation and in pregnancy. The bloody diarrhea is predominant in this condition. The diarrhoea and abdominal pain more or less in same time.

c) Acute fulminante:

- The onset is very acute some time.
- Sever cramps in lower abdomen take place in day and night.
- Tenusmus and urgency are marked.
- Frequency of stool is 30-40 per day.
- Mucus, blood and pus mixed watery stool.
- The main feature of systemic toxicity like high fever (39-40C°), dehydration, hypocalcaemia, Hypoprotenaemia, Anaemia, weight loss and face is gaunt with shrunken eye ball.

d) On Examination: Pallor, weight loss, Tenderness on affected side, high temperature and distention of abdomen in toxic mega colon.

e) Per Rectal Examination: ***Peri anal inflammation like fissure, abscess or fistula-in-ano is mostly*** found in crohn's disease.

ii. Treatment

1. **Diet:** High caloric diet, Lacto lose free diet, Low fat and fiber diet, Low salt diet, Gluten free diet, Low food map diet – Fermentable Oligo-di-monosaccharides and polyols.
2. Vitamines and minerals supplement should be given.
3. Isabagol (Psyllium husk) one table spoon full mix with a glass of water, take at bed time.
4. Extract of Nagkesar pushp (*Mesua ferrea*) should be taken in the morning and evening in empty stomach.
5. Jawarish Jalenos 5 gm in morning and evening.

8. CONCLUSION

Awareness of the growth and development of Crohn's disease in the children, early recognition, early diagnosis of Crohn's disease and appropriate treatment to be given, boosting the immune system. These may prevent in initial stage and easily manage the any type of bowel inflammation, severity and complication. In ulcerative colitis, the natural approaches include life style modification, dietary changes, anti inflammatory traditional drugs, probiotics help in the managing of disease.

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